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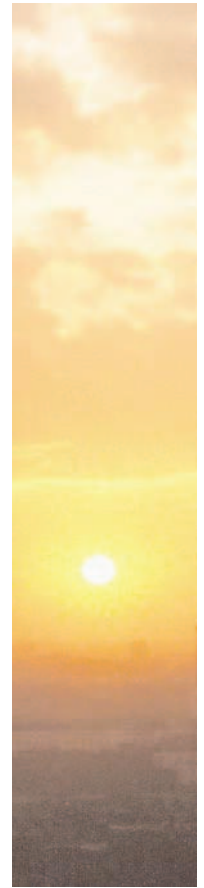
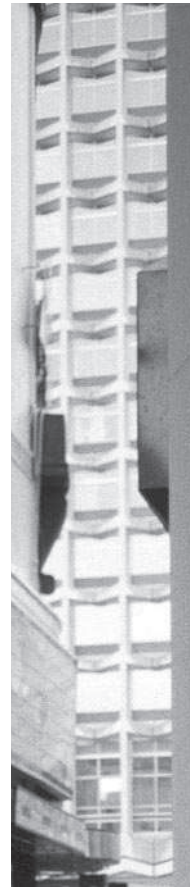
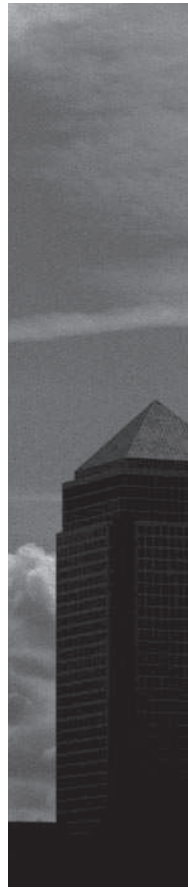
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Royal Institution of Chartered Surveyors

7-8 September 2004

Leeds Metropolitan University

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EXPLORING THE EXPERIENCE OF UK HOMEOWNERS IN FLOOD DISASTERS

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ABSTRACT

The frequency of flooding and the number of properties at risk of flooding in the UK are forecast to increase. Costs associated with flooding are usually significant and include for the provision of adequate flood defences, emergency services as well as for the repair of flood-damaged property.

Although floods are known for their devastating effects often manifested in visible physical damage to property, the ‘human side’ of the impact of floods is often overlooked. At present there is a dearth of research with regards to the experience of homeowners following flood damage to their property.

Findings of exploratory in-depth interviews with homeowners who have recently experienced a flood event to their insured property are presented and classified into five dimensions, namely: economic aspects, emotional aspects, service-related aspects, social aspects and physical characteristics.

It is argued that a greater understanding of the ‘human side’ of flood disasters would be beneficial to all stakeholders involved in the damage management supply chain and should lead to improved services for insured flood victims thereby minimising the impact of flooding events on households.

Keywords: domestic property, flood impacts, homeowners, insurance, qualitative methods.

INTRODUCTION

Flooding is a global phenomenon, which currently impacts in excess of 520 million people per year worldwide. According to some predictions, the number of people living at risk of devastating floods worldwide is set to double from one billion in 2004 to two billion by 2050 unless more attention is paid to prevention and prediction (United Nations University, 2004). Recent major catastrophic events in Central and Northern Europe in 2002 further illustrate the problem of flooding. Dozens of people lost their lives, the socio-economic infrastructure of entire regions was disrupted and natural and cultural heritage was damaged. Preliminary estimates indicated that the flooding caused 15 billion euros in economic damages in Germany, 3 billion in Austria, 3 billion in the Czech Republic and up to 35 million in Slovakia. In addition Hungary, Italy, Bulgaria, Romania and the Ukraine also suffered economic losses (Carpenter, 2002). In England and Wales, it is estimated that five million people, in two million properties live in flood risk areas (Environment Agency, 2002). The increased frequency of flooding in recent years (1997 - 2002) and the growing number of properties being constructed on floodplains suggest that these statistics are set to worsen in future.

Floods are commonly associated with their devastating effects often resulting in visible physical damage to property, while little attention is often paid to the 'human side' of the impact of floods (Green *et al.*, 1983). Although, in more recent years, some attention has been focused on the health effects of flooding (Tapsell, 2001; Tapsell and Tunstall, 2003), presently there is still little existing research that seeks to understand the experience of homeowners following flood damage to their property. This study is part of a wider investigation of insured homeowners' needs and satisfaction determinants with a view to developing and validating a predictive model of key determinants of homeowners' satisfaction in the context of repair works on flood damaged domestic properties. This particular paper explores the various dimensions that encapsulate insured homeowners' experience of flood events. Although the study only focuses on those homeowners whose properties are insured against flooding, some of the issues addressed are generic. The study serves to provide greater understanding of the 'human side' of flood disasters, which is vital as it determines how customers should be treated by staff in service organisations dealing with the aftermath of floods, what involvement homeowners require in the recovery process, and whether or not their role should be a proactive or reactive one (after Business & Marketing Research, 2001). A greater understanding of homeowners' experiences of flood disasters would be beneficial to all stakeholders involved in the damage management supply chain and should lead to improved services for flood victims thereby minimising the impact of flood events on households.

FLOODING AND DOMESTIC PROPERTY OWNERS

Flooding from rivers is historically a natural occurrence that has its own benefits to local economies and ecology. Although flooding is natural and inevitable (Environment Agency, 2003), it causes substantial damage to property and sometimes results in loss of human life and livestock when it occurs in areas populated by humans (Smith and Ward, 1998). In the UK for instance, there have been several significant river floods, the most destructive ones being those in 1947, 1953, Easter 1998 and Autumn 2000.

Understanding Floods

By definition, a flood generally involves the inundation or overflow of water over land that is not normally submerged (Ward, 1978, in Smith and Ward, 1998). Flooding occurs as a result of one or more events such as rainfall filling rivers, streams and ditches; coastal storms resulting in overtopping and breaching of coastal flood defences; blocked or overloaded drainage ditches, drains and sewers; heavy rain resulting in run-off flowing overland; or rain soaking into the ground and raising ground water levels (DTLR, 2002). Although flooding is commonly associated with rivers or the coast, localised flooding that does not normally lead to property being flooded above ground level, also occurs due to broken water mains (DTLR, 2002).

Human activity is generally blamed for increasing the risk of flooding from rivers and streams in many areas. In particular, development may have reduced the natural capacity of floodplains and increased the rate of surface water run-off.

Flood Risk in the UK

Flood risk for a property is generally understood as a combination of the likelihood of a flood occurring and the consequences of the flood in terms of damage caused or impact (DTLR, 2002). In England and Wales, the areas at risk from flooding have been mapped into what is known as the Indicative Floodplain Maps (IFM) which are available on the Environment Agency website. Several criticisms have been advanced against the IFM such as the accuracy of the maps since they do not take into account the effect of flood defences, local topography, and small flood risk areas such as those at risk of flooding due to urban drainage. However, the maps are useful in providing a general overview of the risk of flooding.

Over 5% of the people in England live lower than 5 metres above sea level, including large parts of major cities such as York and London. It has also been suggested that about 7% of the country is likely to flood at least once every 100 years from rivers. In addition, approximately 30% of the coastline is developed and around 1.5% of the country is at risk from coastal flooding (DTLR, 2002). The risk levels highlighted in Table 1 suggest that flooding is a potentially costly problem in England and Wales.

Description	Extent/Cost
Number of Domestic properties at Risk of flooding	1,773,000
People living in properties at Risk of flooding	4-5 million
Number of Industrial/Commercial properties at Risk	136,000
Capital Value of Property in vulnerable areas	£206.8 billion
Capital Value of Agricultural Land in vulnerable areas	£7.1 billion
Total annual average damage at present level of protection (<i>flood defences</i>)	3,439.2 million
Source: DEFRA (2001)	

Table 1 - Flood Risk in England and Wales

Most areas at risk from river flooding are protected using man-made flood defences, which reduce the likelihood of flooding. However, these defences can be breached or

overtopped due to more extreme events, as they are designed to withstand specific flood heights.

Experiencing a flood event and its aftermath

Floods can have devastating effects, especially when they occur without warning. The most visible and obvious impact of floods upon households is the physical damage to the fabric of the building and household contents, which may or may not result in financial loss to the homeowner. However, other more 'indirect' losses, which are generally associated with disruption to the 'normal' course and quality of life, are often overlooked (Green *et al.*, 1983).

The stress associated with losing personal belongings, having to live in temporary accommodation while repairs are undertaken, and the trauma of the clean-up and restoration can be considerable (DTLR, 2002). Tapsell (2001) identified and classified health effects of flooding on households, as reported by victims of the 1998 Easter floods into physical and psychological health-related. The study concluded that although most of the physical health problems suffered by the flood victims seemed to have improved within a year's time, many of the psychological health effects associated with experiencing flooding seemed to persist. The impact of flooding on households is influenced by factors broadly classified into two categories (Green *et al.*, 1983):

- Flood characteristics - duration, depth, speed of development, whether anticipated or not; weather conditions; contaminants (sewerage, oil, silt, etc.);
- Individual's characteristics - age, prior health status, prior stress levels, whether or not evacuated and duration of; event anxiety; aftermath anxiety.

Similarly, Business & Marketing Research (2001) concluded on the basis of their qualitative research, that whether or not a homeowner perceived a flood event as a catastrophe depends largely on three factors, namely:

- The physical impact of the flood event;
- The characteristics of the individual concerned; and
- Where the claim sits in relation to other events in the homeowner's life.

The physical damage caused by flooding has been found to be highly dependant on flood characteristics - the scale and nature of the flood event (Soetanto *et al.*, 2002).

Flood damage to domestic property presents unique challenges from a restoration perspective, particularly the nature of 'projects' (flood-damaged domestic properties) and 'clients' (insured homeowners) involved; both the flood damaged property and the homeowner have unique characteristics summarised by Samwinga and Proverbs (2003) as being:

- Recovery and restoration - returning the flood-damaged property to its pre-incident condition;
- Flood restoration works, by nature, usually involve processes such as cleaning, drying, 'deodorising', sanitation, etc., which are unique;
- The property characteristics such as size, usage and contents;
- They involve flood claims, which can be very complex to handle;

- The parties involved in flood reinstatement projects are typically the homeowner, insurer, contractor(s) (cleaning, drying, and repair), loss adjuster, and sometimes loss assessors, whereas 'ordinary construction projects' typically assemble a team consisting of the client, designer, consultants and contractors;
- The 'clients' (insured homeowners) undergo a potentially traumatic experience often resulting in anxiety during and after the flood event (Green *et al.*, 1983);
- Loss of symbolic objects or irreplaceable assets of sentimental value, underinsurance on buildings and no insurance on contents (resulting in financial loss), may exasperate the trauma experienced by homeowners.

Reinstatement services for insured domestic property occupiers

Principally, insurance involves insurers receiving a premium payment from the insured in return for a guarantee of payment of recompense should the insured suffer a loss of a specified type. Since many people pay premiums over long periods, the occasional losses by particular people can be recompensed within the total premium fund (Clark *et al.*, 2002). In this manner, flood cover enables householders and businesses to minimise the financial cost of damage from flooding (ABI, 2002).

When flooding damages an insured property, the insurer is called upon to finance the reinstatement of the domestic property to a 'pre-flood' condition, in accordance with the terms of the insurance policy. The reinstatement process typically involves a claim chain consisting of: the insured homeowner, insurer, contractor/repairer, drying/cleaning specialist, loss adjuster and occasionally an independent surveyor acting on behalf of the insured but paid by the insurer. Where the onus is on the homeowner to appoint a contractor to repair the damaged property, the homeowner may engage a public loss assessor to deal with the claim on their behalf at the homeowner's expense on the basis of a fixed percentage of whatever is recovered (CILA, 2002). Insurers often tend to be more involved in the reinstatement process by engaging cleaning, drying and repair contractors. However, appointment of a loss adjuster to handle the claim on the insurer's behalf tends to eclipse insurers' 'visibility' in claims. Loss adjusters are engaged and paid by the insurance company to check policy the cover, assess the amount of damage and the work needed to reinstate the property to its pre-incident condition, estimate costs, supervise the ongoing work, and make recommendations to the insurance company for payments (Crichton, 2002).

Flood damage repairs involve contractors whose job is to restore the property to a habitable state. However, a previously flooded property has to be dried out before it can be repaired, a process which often involves the services of specialist drying firms. Once the drying is complete, a range of other specialists are involved in the repair works, depending on the nature and extent of the work. All the service providers who interact with the insured homeowner are likely to influence the homeowner's experience either negatively or positively.

This study presents a qualitative exploration of homeowners' experiences of flood events, with emphasis on the issues that encapsulate a householder's experience with a view to provide enhance understanding of the human aspects of flood disasters. A greater understanding of homeowners' experiences of flood disasters would be

beneficial to all stakeholders involved in the repair and reinstatement of flood damaged domestic properties.

RESEARCH METHODOLOGY

In order to achieve the exploratory aims of the study, a qualitative approach was adopted to build a comprehensive picture of homeowners' flooding experiences. In-depth interviews were favoured for this initial data collection stage due to their unique potential of yielding rich data, placed in its 'historical' context by allowing homeowners to recount their experience of the physical event (flooding), the services received and any other aspects surrounding the flooding event (after Arksey and Knight, 1999). The interviews were conducted with ten insured homeowners who have previously experienced flood damage to their property, but chosen by convenience and pragmatic considerations such as access to subjects. Table 2 shows the demographic characteristics of the insured homeowners interviewed for this pilot phase of the study. In order to minimise the potential for bias, participants included a combination of those who had "good" as well as "bad" experiences and were geographically dispersed, which ensured a variety of flooding contexts/settings.

		Actual Sample (No.) (N=10)
Gender	Female	6
	Male	4
Age	40 – 59	2
	60 and over	8
Ethnicity	White	10
Marital Status	Married	8
	Widowed	1
	Divorced/Separated	1
Disability/illness	No Long-term illness/disability	8
	Long-term illness	2
Geographical location	Shropshire	1
	Worcestershire	4
	Cornwall	1
	Lancashire	1
	Derbyshire	1
	Surrey	1
	W. Yorkshire	1
Dwelling Type	Detached house/Bungalow	1
	Semi-detached house or Cottage	2
	Row/terrace house or cottage	6
	Other (Double fronted Town House)	1
Property Value	Up to £250,000	8
	Over £250,000	2

Table 2 – Demographic Characteristics of Interviewed Homeowners

The taped interviews (each lasting about 45minutes) were transcribed and word-processed using Microsoft Word. Due to the enormous volume of data yielded from the in-depth research interviews, and need to enhance rigour (Richards and Richards, 1991) and trustworthiness, NVivo (NUD.IST Vivo, a qualitative data analysis

software package designed by Qualitative Solutions and Research Pty. Ltd.) was used for qualitative data analysis.

KEY RESEARCH FINDINGS

Individual homeowners have their own unique and potentially complex experiences in flood events, which may be a function of a myriad of variables. However, the analysis of the interview data revealed several dimensions that appear to describe the experience of homeowners whose property has been flooded. The various issues raised by homeowners could be summarised in six dimensions, which are outlined in Table 3. While these themes ran across the various interviews, the findings are not meant to be generalised for every flood victim but rather provide a good basis for further research in a bid to provide a more holistic understanding of homeowners' experiences of flood events and reinstatement services.

Economic Aspects

Homeowners interviewed expressed concern regarding the potential reduction in property values due to flooding, loss of property in the case of under-insurance, and fears that insurers may not renew flood-cover for properties deemed to be at greater risk of flooding. The following quote illustrates these sentiments:

"... if you claim, at the next renewal the premium goes up or they refuse to insure you. That's the other fear. That makes us loath to put a claim in the first place. ... A lot of insurers I believe would not consider a proposal from us if we were honest and say we've been flooded before" (male respondent, age 40-59, part-time lecturer, Stotteston).

Physical Aspects

Homeowners raised a range of physical aspects that have a bearing on the experience of homeowners during a flood event. Floodwater depth, presence of contaminants in the flood-waters (sewage, fuel, chemicals, etc.), the duration of the flood and the amount of floodwater, the speed at which the flood develops, whether or not homeowners received sufficient flood warning, the timing of the floods (for instance holiday seasons when households were looking forward to a peaceful holiday), all combine to influence the physical aspect of the householder's experience. The physical extent of damage to the property and contents, which is a function of some of the above factors, has a huge bearing on homeowners' experiences. However, some homeowners whose properties suffered significant flood damage seem to have coped well if they had a good service experience (service related aspects) with their service providers (insurers, loss adjusters, repairers, etc.).

Service-Related Issues

Homeowners' perception of the extent to which their needs were met and how their service providers treated them during the reinstatement process, were both raised as impacting on homeowners overall experience of the flood disaster. A feeling of loss of control once the homeowner handed the property keys to repairers was another highlighted element of their experience. However, the confidence an insured homeowner has in their service providers, particularly the contractor carrying out the

repair works, was highlighted as impacting homeowners' service-related experience. The quote below reflects these sentiments:

“As soon as I knew “X” [company name withheld] was dealing with it [i.e. the repair works], I knew I could take a holiday - there was nothing for me to do” (male respondent, age 40-59, self-employed, Cornwall).

DIMENSIONS	DESCRIPTIVE STATEMENTS
Economic Aspects	Financial – expenses associated with living in temporary accommodation.
	Insurance Cover Fears – fear of potential premium rises and/or refusal by insurers to extend cover.
	Property Value – fear of potential reduction in property value and/or demand.
	Loss of Property – some of which may not be replaceable.
	Loss of Earnings – associated with staying off work to oversee repair work.
Emotional Issues	Fear of flooding – in the aftermath of a flood event.
	Leaving home – upheaval associated with leaving in alternative accommodation.
	Loss of Memorabilia – things which may be of sentimental value and irreplaceable.
	Fatigue – associated with cleaning up and repair work
	Reaction to flooding – included Disbelief, Shock, Surprise, Devastating, Stressful, Worried, ‘Get on with Life’.
Service-Related	Service Experience – how their service providers dealt them with and how well their needs have been met.
	Communication – consistent, timely and information and/or advice.
	Loss of Control – while the repairs are being carried out
	Temporary Accommodation – proximity to home, comparability.
	Speed of Return to Property.
	Confidence in service providers – makes easy for homeowners' to get on with other aspects of life while repairs are ongoing.
	Fairness – how fair the homeowner perceives the settlement to have been
Social Aspects	Family support network – helps to cushion the impact of the catastrophe.
	Children – families with children experienced more difficulties in day to day running of household.
	Friends support network – another source of help for flood victims
	Community Spirit – may be fostered when a neighbourhood empathises
	Situational Issues – other personal circumstances such as family tragedies can compound the stress felt by flood victims.
	Homeowners' Characteristics - Individual characteristics may have a bearing on coping with the flood and its aftermath.
	Experience of Flooding –previously flooded homeowners find it easier to cope next time
Physical Aspects	Personality – each homeowner is different and will cope differently in crisis
	Vulnerable Groups such as the Infirm, Elderly people – had unique requirements and some found it difficult to cope with the resulting upheaval.
	Flood characteristics – e.g. floodwater depth, contamination, amount of floodwater, and duration of flooding, define the nature of the flood event.
	Extent of damage – extent of property damage and whether or not its insured.
	Flood warning – how much warning homeowners had before the flood.
	Flood Timing or Season – holiday time can be particularly distressing.

Table 3: Homeowners' experiences during flood damage to their property

Emotional Issues

One of the emotional aspects that came out strongly among the interviewees is the fear of flooding recurring, a concern that is referred to by Green *et al.* (1983) as flood “threat anxiety.” Below is a quote that illustrates the above concern:

“Emotionally it really affected me...even now when it rains like it’s raining today I panic. Is it going to happen again?” (female respondent, age 40-59, retired, Blackburn).

The loss of symbolic objects such as photographs, which may not be replaceable, proved to be a cause for distress. This has been previously reported in other research (Business & Marketing Research, 2001; DTLR, 2002). The following quotes illustrate these sentiments:

“It [i.e. the flood] did affect us severely; we lost things that had been in the family over 100 years. You can’t replace them. It is distressing and very sad” (female respondent, age 60+, retired, Glossop).

People react differently when faced with a disaster. ‘Disbelief’, ‘shock’, ‘surprise’, ‘devastating’, ‘stressful’, ‘worried’ – are all words that typified the reaction of homeowners when they discovered their property was going to be flooded or had actually been flooded. The following quote illustrates homeowners’ feelings when reacting to the threat or onset of flooding to their property:

“We were not expecting it. We were watching the river rising and were concerned. We weren’t familiar with the habits of flooding and when it came in from the back, as it’s a lower level, we were surprised, as the river hadn’t yet come from the front. We had in the end about an hour’s warning from our neighbours who said we should move our furniture. We felt disbelief” (female respondent, age 60+, retired, Bewdley).

However, some homeowners were simply determined to get on with their life, despite the upheaval, knowing that their home and/or contents were insured and would hence be replaced/repared.

Social Aspects

Households with children had their own unique experiences particularly in the event that they moved into temporary accommodation outside their local area. Some experiences include: children missing their friends, children not being able to continue their normal club activities, etc., as captioned below:

“... my children had to stop activities because we are actually living in another town now and I can’t actually physically get them there and back” (female respondent, age 25-39, Teacher, Surrey).

Service providers would do well to facilitate the acquisition of temporary accommodation to homeowners in close proximity to their home; however, this is not always possible especially in the event of very high demand as a result of many properties having been severely flooded in a local area.

CONCLUSIONS

There is presently a dearth of research that evaluates the whole range of aspects of homeowners' experience in flooding events. As part of a wider investigation, an initial attempt has been made to uncover dimensions of homeowners' experiences following flood damage to their property. The dimensions identified were classified as: economic aspects, emotional aspects, service-related aspects, social aspects and physical characteristics. Service providers dealing with flood recovery may use these dimensions to gain a more holistic understanding of their customers' experiences and requirements, and consequently formulate effective strategies to improve customer satisfaction. Since the dimensions were gleaned from an explorative study involving ten interviewees, additional research to further test these dimensions would be necessary to advance our understanding of the human side of flood disasters. It is argued that a greater understanding of homeowners experiences flood events would be beneficial to all stakeholders involved in the damage management supply chain and should lead to improved services for insured flood victims thereby minimising the impact of flooding events on households.

The issues raised in this paper are part of a wider study towards the award of a PhD degree, which investigates insured homeowners' needs and satisfaction determinants with a view to developing and validating a predictive model of key determinants of homeowners' satisfaction with respect to the repair of flood damaged domestic properties.

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